

Informal Discussion Transcript  
Session 1A - Innovative Retirement Products

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**JON FORMAN:** I've got a couple questions for Moshe [Milevsky]. I enjoyed the presentation and had the benefit of reading a paper or two of yours on this subject. What you didn't touch on very much in this paper was the political economy of why the king and Hamilton wanted to sell these kinds of tontines rather than bonds, or annuities, which is largely that once the last participant dies, the government has no debt. So we've obviously in America gotten beyond that because we're willing to tolerate all kinds of debt today, but at that time when they fought a war, they were disinclined to borrow the money because the bonds could go on forever; politically, it might have been easier. I think that motivates why they paid so much; in other words, yes, an economist might look at that and say, you know, 14 percent is the right number or 10 percent and 7 percent for the tontine, or those numbers are too high, you governments shouldn't pay that much, as Halley said. But even at that, I think both of the tontines you discussed were undersubscribed, so in other words, members of the public wouldn't buy them, even at these exorbitantly high rates of return. So just if you had a comment on that?

The other question I had was in terms of what you talked about, some risk aversion stuff and different people with

different risk aversions would have different numbers coming out. I take it you're suggesting then that every tontine should have a different portfolio and you could sell tontines to people based on what their risk aversion was, so that some people might want a 100 percent stock portfolio and other people might want a 60/40 and other people might want a 100 percent bond portfolio, based on the risk aversion. Is that what you're saying?

**MOSHE MILEVSKY:** I guess in the interest of time, I'll respond briefly and for those that want the long response, I'm writing a book on this. It should be called *Who Murdered the Tontine?* [The actual name of the book is *Tontine: Why the Retirement Annuity of the Future Should Resemble Its Past*, which will be published by Cambridge University Press.] The first issue is obviously very important. The reason it was issued was because they want to self-amortize and disappear, but interestingly they were not very popular in England. They were much more popular in France. I think there were many different ways in which they were borrowing money at the time. Interestingly, after the failure of the tontine, and they do consider it a failure because they have so few subscribers—they were hoping for 10,000 people, they only got about 620 or so investors, if you remember the chart—about six months after they closed the tontine and made the first payment, England

launched the Bank of England. So literally six months after, they realized they're not going to be able to raise money this way. The way they raised money was through the Bank of England, and through issuing debt, the way we consider debt today, so that was No. 1.

In terms of the risk aversion issue, what I'm saying is that different risk preferences will induce different payout structures, just like different people have different risk preferences, they like different asset mixes. I'm not saying that the assets underlying the tontine will be different. You could do that as well where we get together, we enter into a tontine and we put the money in stocks, and other people put the money in bonds and they share dividends. What I'm saying is that—even in a bond-like structure—if you're more risk averse, there's something called longevity-risk aversion, which is very, very different from financial-risk aversion. Longevity-risk aversion is when I say I know there's a 5 percent chance I'll become a centenarian and I don't care, I'd rather enjoy myself now. There's a 95 percent chance I'll never hit 100, I want to enjoy my money now. I am longevity-risk tolerant. Other people look at the 5 percent chance that they'll become centenarian and it scares them. "You mean to tell me there's a 5 percent chance I'll live to 100, oh my God, I better spend less and have enough money." They're

longevity-risk averse.

The different aversion to longevity risk, which is very, very different from your biological estimate of whether you'll live to that age, that's something very different. That's an estimate of whether you think you'll make it. It will induce different tontine structures and that's really what I meant.

**DAVE SANDBERG:** The question I have based on work you've done earlier, Moshe, is looking at the human capital element of this, which I think kind of got ignored a little bit. We kind of made the simplifying assumptions that either spending is going down or it's this consistent risk curve, but the reality is that as you look at the typical problem of saying 60 or 65 retirement, most people have their human capital option that will extend for another 10 or 20 years and so I'm curious if you've done any linking of that concept with the tontine? I mean, it leads to the idea that you end up at an 80 or 85 age, you're trying to lock in. Whether it's a constant stream or tontine structure, either way you're trying to say here's the end state, now I have a solvable problem between age 60 and 80 that says OK, here's a finite horizon and now I can start looking at my risk preferences. Have you done any of that?

**MOSHE MILEVSKY:** I'm sure David might have interesting things to say about human capital, I know you've written on

that as well. I mean the first issue we have to overcome is that tontine insurance is illegal in the U.S., so before we talk about how we design them, we have a problem that must be solved from the legal perspective. Tontine insurance, as of 1906, the New York State Insurance Commission banned it after various scandals. So we have to overcome the whole taint associated with tontines and then we can talk about how we would structure it. But I completely agree that there is an issue of optimal age at which to purchase it. When would I buy one of these things? I wouldn't buy it at 65 because I still have the option to work. Would I buy it at 72? What's the optimal annuitization age? So these are all issues that have to be worked out, but once we have this choice available where people can say, I want the fixed one where I know what I'm going to get versus the participating one. I don't know, David, what do you think about the human capital aspect?

**DAVID BLANCHETT:** I agree, I think that the option to delay is very valuable. I think one problem with a lot of research on annuitization is that it assumes you can only make the decision at retirement. In reality, you can make that decision every year when you retire and so I think for most folks it actually pays off to wait until age 70 or 80, when they can no longer work and then purchase that insurance, because you don't need an annuity if you're not

going to live a long time. If, all of the sudden at age 72 when you still have resources, you become deathly ill, the annuity wasn't a good deal.

**DAVE SANBERG:** Just by clarification, we do have some ways of approaching the tontine type through the participation insurance, I mean it's a back ended way but the fact that most insurance has some participating element is I think clearly ...

**MOSHE MILEVSKY:** Sure and again I don't want to monopolize the conversation here, my problem with them is that they're very opaque. I like the transparency of the tontine; in fact, historically they would show up at the hotel twice a year in London, everybody would have to show up a week earlier and say hi I'm alive, they would count the number of people that are alive, they know there's \$10,000 and they'd split it. The smoothing methodology and how long do you smooth for and how do you, you know you've got to explain it to mom and pop and I think that as soon as there's this black box where some actuary, the wizard, decides who ends up getting the payments, I think that's going to create a bit of an obstacle and I think that's a little bit of the issue with participating. So group self-annuitization fixes it, but I completely agree with you, I mean that's the point of all these participants. The folks at TIAA CREF would tell me that's essentially what we're

doing, we're participating, but it's the opacity that bothers me.

**ANDY PETERSON:** David, you referenced some of the lack of looking at long-term care issues and the shocks there. I know the SOA has sponsored a paper authored recently by Vickie Bajtelsmit and Anna Rappaport where they are simulating sort of individual responses and different situations in long-term care shocks in there, so that might be something you might look at as well. But any other responses from the paper authors to Kai [Kaufhold] in the last couple minutes, and his discussant responses that you'd like to respond to?

**DAVID BLANCHETT:** I was going to say about the long-term care thing, if you look at long-term care insurance, you could say that's been mispriced over the last five years, and so one of my concerns about trying to model long-term care is if actuaries can't figure it out, how am I going to model it correctly? So, I think that's a complicated cost to figure out. Who knows what will this actually cost 20 or 30 years from now?

**JON FORMAN:** David, on that point, you know the long-term care issue, I thought, it was still a weakness in your presentation that you didn't present some estimate of what long-term care cost should be per year through life. You know when you come to a conclusion that people could be



spending more and we can tell them in the first year I know how happy your financial planners are going to be to be able to tell their clients, oh, you can take 5 percent out this year instead of what half the papers I read now say 4 percent is too high, you really only should be taking out 2.9 percent in this market, and if you ignore long-term care, I'm just not as convinced about the 5 percent number you came up with.

**DAVID BLANCHETT:** Yeah, it's a definite weakness and I'm trying to weave it in there but then it just becomes a more and more complex story. I actually don't generally assume constant withdrawals in my research, for example, but as you add more and more assumptions, it creates these crazy models you're working with.

**FROM THE FLOOR:** Mine is more of an observation than a question, I guess, and it has to do with your picture of the black turkey. One black turkey in a 401K plan is good news if they don't have to save as much. I think where the risk is going to come in next is that we're suddenly seeing employer transfer of the health insurance requirements to the employee and so we're going to have a second black turkey and I just can't quite imagine how the average citizen is going to figure all of this out without the appropriate financial education. As you said, David, we can't even project ourselves and we're supposed to be the

experts, so I'm very concerned about what's going to happen to your savings if you pick the wrong health insurance plan with a high deductible. I mean we're just adding to the complexity geometrically, I think.

**DAVID BLANCHETT:** I agree.